WHAT IS CLAIMED IS:

1. An apparatus for creating pulse magnetic stimulation, in which pulse current is generated to create magnetic flux, the apparatus comprising:

a driving voltage supplying section for receiving AC voltage from a voltage source, converting the received AC voltage into DC voltage having a predetermined magnitude, and then outputting the DC voltage;

a capacitor section for accumulating electric charge in accordance with the DC voltage;

an input switch section provided between the driving voltage supplying section and the capacitor section, for controlling the accumulation of electric charge in the capacitor section;

a coil connected in series to the capacitor section, for generating magnetic flux in accordance with current generated by both-end voltage corresponding to the electric charge accumulated in the capacitor section;

an output switch section provided between the capacitor section and the coil, for controlling discharge of the electric charge accumulated in the capacitor section through the coil; and

a shunt switch section connected in parallel between the coil and the output switch section, for lowering magnetic energy stored in the coil and voltage stored in the

capacitor section into a ground level to obtain a pulse magnetic field.

2. The apparatus for creating pulse magnetic stimulation according to claim 1, wherein said driving voltage supplying section comprises:

a variable regulator for converting the AC voltage supplied from the voltage source into an AC voltage specified by a control section;

a transformer for boosting the AC voltage outputted from the variable regulator into an AC voltage having a magnitude corresponding to a predetermined transformation ratio; and

a rectifying section for converting the AC voltage boosted by the transformer into the DC voltage.

3. The apparatus for creating pulse magnetic stimulation according to claim 2, wherein said driving voltage supplying section further comprises a filtering section for smoothing the DC voltage full-wave rectified by the rectifying section.

4. The apparatus for creating pulse magnetic stimulation according to claim 2, wherein said variable regulator can adjust a magnitude of the output AC voltage.

5. The apparatus for creating pulse magnetic stimulation according to claim 1,

wherein when the magnetic energy and the voltage are lowered into the ground level in a state that the shunt switch section is switched on, the output switch section is switched off.

6. The apparatus for creating pulse magnetic stimulation according to claim 1, wherein when said electric charge has been completely accumulated in the capacitor section, the input switch section is switched off and the output switch section is switched on, and

wherein it is determined by means of capacitance of the capacitor section whether said electric charge has been completely accumulated in the capacitor section or not.

7. The apparatus for creating pulse magnetic stimulation according to claim 1, said apparatus further comprising a power monitoring section for calculating a magnitude of the current using the magnetic flux generated due to the current flowing through the coil to detect an error of a large power signal.

8. The apparatus for creating pulse magnetic stimulation according to claim 1, wherein said capacitor section is connected in parallel to an additional capacitor group, the additional capacitor group comprises one or more additional capacitor sections

connected in parallel, respectively, and each of the additional capacitor sections comprises one additional capacitor and one switching element connected in series.

9. The apparatus for creating pulse magnetic stimulation according to claim 8, wherein on or off states of said switching element are controlled to change a value of capacitance, and only when the switching element is switched on, the capacitor section and the additional capacitor section are connected in parallel one another.

10. The apparatus for creating pulse magnetic stimulation according to claim 1 or 8, wherein when said input switch section and said shunt switch section are switched off and the output switch section is switched on, the capacitor section and the coil constitute an RLC serial resonant circuit, and each parameter value of the RLC serial resonant circuit satisfies an under-damping condition.

11. The apparatus for creating pulse magnetic stimulation according to claim 10, wherein said output switch section is switched on and off every one or a half period of the RLC serial resonant circuit, and a period in which said output switch section is switched on and off is less than 1kHz.

12. The apparatus for creating pulse magnetic stimulation according to claim 1,

wherein a waveform of the pulse current is at least one chosen from a sine wave, a square wave and a triangle wave.

13. The apparatus for creating pulse magnetic stimulation according to claim 1, wherein said input switch section, said output switch section and said shunt switch section are any one of a relay, a thyristor and an Insulated Gate Bipolar Transistor (IGBT).

14. An apparatus for creating pulse magnetic stimulation, in which pulse current is generated to create magnetic flux, the apparatus having a resonant circuit comprising a coil, a resistor and a capacitor, the apparatus further comprising:

a driving voltage supplying section connected in parallel to the capacitor, for accumulating electric charge in the capacitor, by receiving AC voltage from a voltage source, converting the received AC voltage into DC voltage having a predetermined magnitude, and then outputting the DC voltage;

an input switch section provided between the driving voltage supplying section and the capacitor, for allowing the electric charge to be accumulated in the capacitor only when the input switch section is switched on;

an output switch section provided between the capacitor and the coil, for allowing the electric charge accumulated in the capacitor to be discharged through the

coil only when the output switch section is switched on; and

a shunt switch section connected in parallel between the coil and the output switch section, for lowering magnetic energy stored in the coil and voltage stored in the capacitor into a ground level to obtain a pulse magnetic field,

wherein the driving voltage supplying section comprises:

a variable regulator for converting the AC voltage supplied from the voltage source into an AC voltage specified by a control section;

a transformer for boosting the AC voltage outputted from the variable regulator into an AC voltage having a magnitude corresponding to a predetermined transformation ratio; and

a rectifying section for converting the AC voltage boosted by the transformer into the DC voltage.

15. The apparatus for creating pulse magnetic stimulation according to claim 14, wherein said capacitor is connected in parallel to an additional capacitor group, the additional capacitor group comprises one or more additional capacitor sections connected in parallel, respectively, and each of the additional capacitor sections comprises one additional capacitor and one switching element connected in series.

16. A method of supplying a pulse current to generate magnetic stimulation,

comprising:

a step of inputting an operation start instruction to an apparatus for creating pulse magnetic stimulation;

(a) a step in which a power supplying section receives an AC voltage from a voltage source and converts the received AC voltage into an output AC voltage having a predetermined magnitude;

(b) a step in which a rectifying section converts the converted AC voltage into a DC voltage;

(c) a step in which when an input switch section is switched on, a capacitor section accumulates electric charge corresponding to the DC voltage;

(d) a step of switching off the input switch section and switching on an output switch section, when the capacitor section has completely accumulated the electric charge;

(e) a step of allowing a current to flow in a coil, the current being generated due to a both-end voltage corresponding to the electric charge accumulated in the capacitor section;

(f) a step in which the coil generates magnetic flux on the basis of the current;

(g) a step of switching on a shunt switch section after a predetermined period time;

(h) a step of switching off the output switch section and switching on the input

switch section, when magnetic energy stored in the coil and voltage accumulated in the capacitor section is lowered into a ground level; and

a step of repeating the steps (a) to (h) until an operation end instruction is inputted to the apparatus for creating pulse magnetic stimulation, or a predetermined burst on period expires.

17. The method of supplying a pulse current according to claim 16, wherein after carrying out said steps (a) to (h), a step of determining a magnitude of voltage to be stored in the capacitor section is further carried out, and

wherein the magnitude of voltage to be stored in the capacitor section is determined on the basis of a magnitude of an output AC voltage converted by a variable regulator of the power supplying section.

18. The method of supplying a pulse current according to claim 16, wherein said steps (a) to (d) are carried out in a pulse off state where a current does not flow in the coil, and said steps (e) to (h) are carried out in a pulse on state where a current flows in the coil.

19. The method of supplying a pulse current according to claim 18, wherein the burst on period is a period that the pulse on state and the pulse off state are

alternately repeated and thus, an induced voltage is generated to create a stimulation, and the burst on period comprises a stimulation ramp-up period, a stimulation maintenance period and a stimulation ramp-down period.

20. The method of supplying a pulse current according to claim 18, wherein the apparatus for creating pulse magnetic stimulation can vary a modulation period corresponding to a period of the pulse on time and the pulse off time by varying the pulse off time.

21. The method of supplying a pulse current according to claim 19, wherein during the stimulation ramp-up period, a magnitude of the output AC voltage converted by the variable regulator of the power supplying section becomes higher gradually, during the stimulation maintenance period, the magnitude of the output AC voltage of the power supplying section is maintained constantly, and during the stimulation ramp-down period, the magnitude of the output AC voltage converted by the variable regulator of the power supplying unit becomes lower gradually.

22. The method of supplying a pulse current according to claim 16, wherein the apparatus for creating pulse magnetic stimulation includes at least one of a ramp modulation, a phase modulation, a duration modulation, a timing modulation, an

amplitude modulation, a frequency modulation, and a duty modulation.

23. The method of supplying a pulse current according to claim 22, wherein the apparatus for creating pulse magnetic stimulation includes at least one chosen from a ramp modulation, a phase modulation, a duration modulation, a timing modulation, an amplitude modulation, a frequency modulation and a duty modulation.

24. A magnetic flux emitting unit for externally emitting magnetic flux generated from a coil in a stimulation apparatus having a resonant circuit comprising the coil, a resistor and a capacitor, the apparatus generating a pulse current to create the magnetic flux, the unit comprising:

the coil;

a case having an insulating feature and also having a disk shape surrounding the coil;

a grip projected from a lower portion of the case; and

a lead line coupled to the coil and penetrating through the case and the grip,

wherein the coil is formed to be a single-layer solenoid shape, and the case has a plurality of air holes for cooling heat generated from the coil in an air cooling manner.

25. The magnetic flux emitting unit according to claim 24, further comprising

a magnetic flux focusing unit coupled to the case, for focusing the magnetic flux generated from the coil on one point using a boundary condition of magnetic field,

wherein a coolant and a stratiform iron core of the magnetic flux focusing unit are sealed.

26. The magnetic flux emitting unit according to claim 25, wherein said stratiform iron core of the magnetic flux focusing unit is disposed in parallel to the coil, the permeability of materials of the central stratiform iron core is larger than the permeability of material of the peripheral stratiform iron core, an end portion of the stratiform iron core from which the magnetic flux is emitted is formed to have a toy top shape, and the coolant is circulated through a hose connected to the magnetic flux focusing unit.